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Abstract

PURPOSE:To form a flat layer interface with no recession nor projection at an atomic layer level by separating only excessive atoms such as isolated atoms and clusters on the topmost surface of a growth layer from the surface after coating the surface of a substrate with a raw material.
CONSTITUTION:A Ga molecular beam is evaporated from a raw material Ga 17 by opening a Ga cell shutter 20, As is evaporated from a raw material As 18 by opening an As cell shutter 21 and GaAs is grown on the surface of an InP substrate 12. The temperature of the substrate 12 is set at 400-500 deg.C. After a main shutter 22 is closed, an In cell shutter 19 is opened and the shutter 20 is closed. Such a state is held for approx. 1min or longer. Then, only excessive Ga atoms on the topmost surface of a GaAs thin film layer formed on the substrate 12 is separated from the surface and a perfectly flat growth layer atom surface underneath is exposed. This forms a flat layer interface with no recession nor projection at an atom layer level.